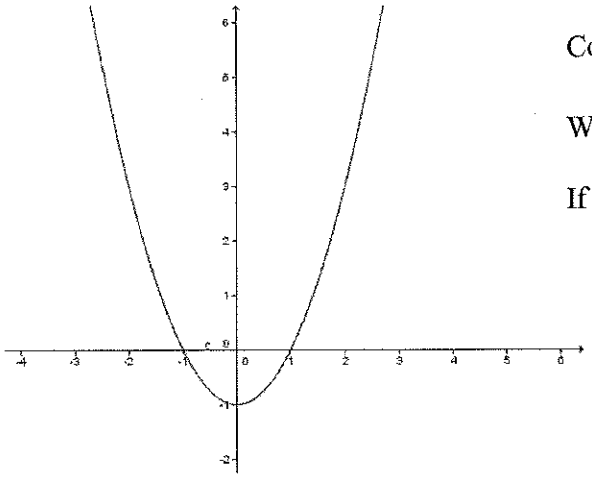
Solving Quadratic Inequalities



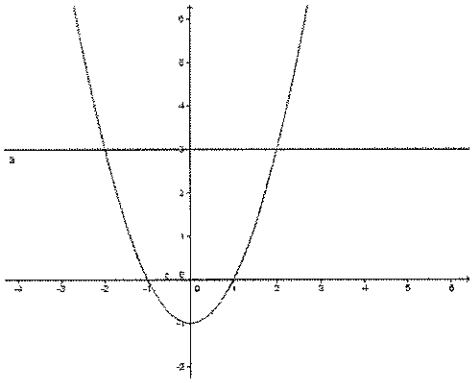
Consider the graph of $y = x^2 - 1$

We can use it to solve the inequality $x^2 - 1 > 0$

If you look at the graph y > 0 when $x > 1$ or $x < 1$

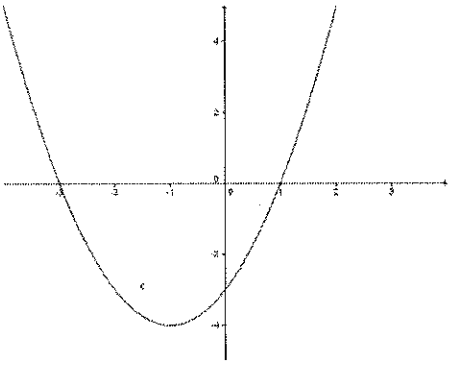
We can now use the graph to solve $x^2 - 1 \geq 3$

We add in the line of y = 3, and we can see the solution is $x \leq -2$ or $x \geq 2$

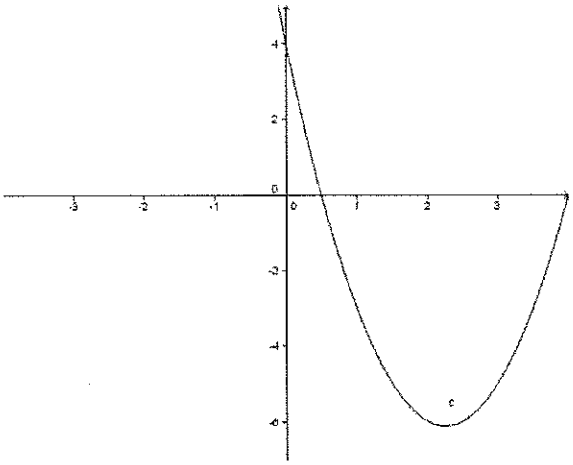


Now try the following.

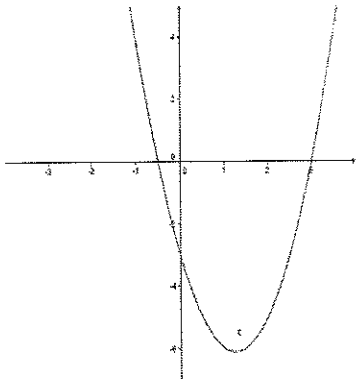
1. Use the graph of $y = x^2 + 2x - 3$ to solve $x^2 + 2x - 3 \geq 0$



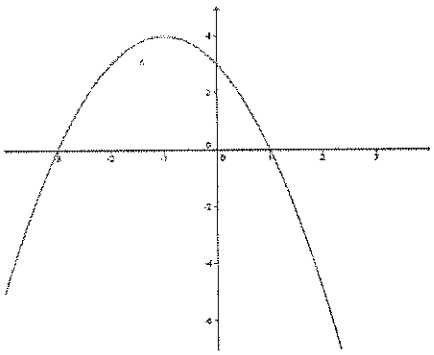
2. Use the graph of $y = 2x^2 - 9x + 4$ to solve $2x^2 - 9x + 4 < 0$



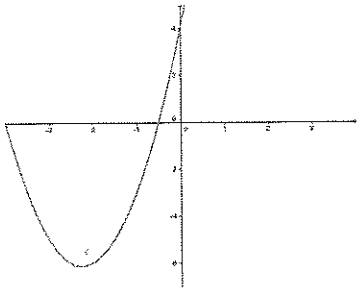
3. Use the graph of $y = 2x^2 - 5x - 3$ to solve $2x^2 - 5x - 3 > 0$



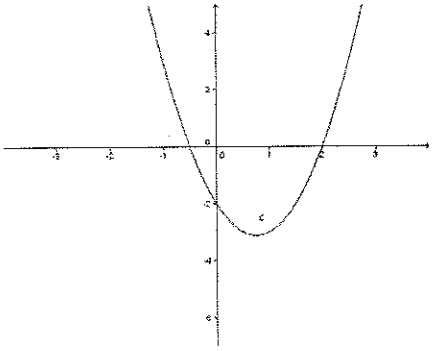
4 Use the graph of $y = -x^2 - 2x + 3$ to solve $-x^2 - 2x + 3 \leq 0$



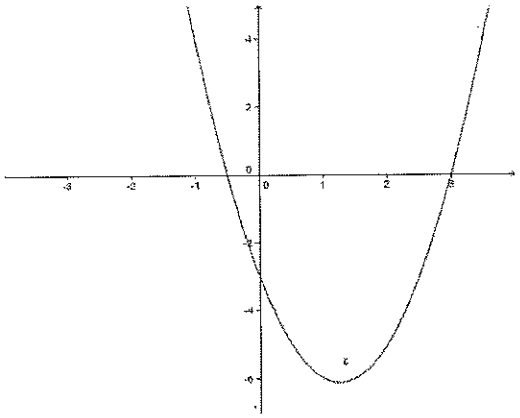
5. Use the graph of $y = 2x^2 + 9x + 4$ to solve $2x^2 + 9x + 4 \geq 0$



6. Use the graph of $y = 2x^2 - 3x - 2$ to solve $2x^2 - 3x - 2 < 0$



7. Use the graph of $y = 2x^2 - 5x - 3$ to solve $2x^2 - 5x - 3 > 1$



8. Use the graph of $y = x^2 - 4$ to solve $x^2 - 4 \leq 5$